

Release notes for ENDF/B Development n-096\_Cm\_243  
evaluation



April 26, 2017

- fudge-4.0 Warnings:

1. Missing a channel with a particular angular momenta combination  
*resonances / resolved / MultiLevel\_BreitWigner (Error # 0): missingResonanceChannel*

WARNING: Missing a channel with angular momenta combination L = 0, J = 1.0 and S = 1.0 for "capture"

2. Potential scattering hasn't converted, you need more L's!  
*resonances / resolved (Error # 1): potentialScatteringNotConverged*

WARNING: Potential scattering hasn't converged by L=0 at E=100.0 eV, xs[0]/xs[0]=100.0% > 0.1%

3. Cross section does not match sum of linked reaction cross sections  
*crossSectionSum label 0: total (Error # 0): CS Sum.*

WARNING: Cross section does not match sum of linked reaction cross sections! Max diff: 0.52%

4. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.  
*Section 1 (n[multiplicity:'energyDependent', emissionMode:'prompt'] + n[emissionMode:'6 delayed'] + gamma [total fission] [nubar]): / Form 'eval': (Error # 0): Condition num.*

WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small

5. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.  
*Section 2 (n[multiplicity:'energyDependent', emissionMode:'prompt'] + n[emissionMode:'6 delayed'] + gamma [total fission] [nubar]): / Form 'eval': (Error # 0): Condition num.*

WARNING: Ratio of smallest/largest eigenvalue (2.800510e-10) is too small

6. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.  
*Section 3 (total): / Form 'eval': / Component 0 (Error # 0): Condition num.*

WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small

7. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.  
*Section 3 (total): / Form 'eval': / Component 1 (Error # 0): Condition num.*

WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small

8. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.  
*Section 4 (n + Cm243): / Form 'eval': / Component 0 (Error # 0): Condition num.*

WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small

9. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.  
*Section 4 (n + Cm243): / Form 'eval': / Component 1 (Error # 0): Condition num.*

WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small

10. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.  
*Section 8 (n[multiplicity:'energyDependent', emissionMode:'prompt'] + n[emissionMode:'6 delayed'] + gamma [total fission]): / Form 'eval': (Error # 0): Condition num.*
- WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small
11. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.  
*Section 9 (n + (Cm243\_e1 -> Cm243 + gamma)): / Form 'eval': (Error # 0): Condition num.*
- WARNING: Ratio of smallest/largest eigenvalue (2.315558e-09) is too small
12. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.  
*Section 10 (n + (Cm243\_e2 -> Cm243 + gamma)): / Form 'eval': (Error # 0): Condition num.*
- WARNING: Ratio of smallest/largest eigenvalue (2.862949e-10) is too small
13. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.  
*Section 11 (n + (Cm243\_e3 -> Cm243 + gamma)): / Form 'eval': (Error # 0): Condition num.*
- WARNING: Ratio of smallest/largest eigenvalue (6.539109e-10) is too small
14. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.  
*Section 12 (n + (Cm243\_e4 -> Cm243 + gamma)): / Form 'eval': (Error # 0): Condition num.*
- WARNING: Ratio of smallest/largest eigenvalue (8.179589e-10) is too small
15. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.  
*Section 14 (n + (Cm243\_e6 -> Cm243 + gamma)): / Form 'eval': (Error # 0): Condition num.*
- WARNING: Ratio of smallest/largest eigenvalue (1.411852e-09) is too small
16. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.  
*Section 15 (n + (Cm243\_e7 -> Cm243 + gamma)): / Form 'eval': (Error # 0): Condition num.*
- WARNING: Ratio of smallest/largest eigenvalue (6.003259e-10) is too small
17. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.  
*Section 16 (n + (Cm243\_e8 -> Cm243 + gamma)): / Form 'eval': (Error # 0): Condition num.*
- WARNING: Ratio of smallest/largest eigenvalue (1.407412e-09) is too small

18. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

*Section 17 ( $n + (Cm243\_e9 \rightarrow Cm243 + \text{gamma})$ ): / Form 'eval': (Error # 0): Condition num.*

WARNING: Ratio of smallest/largest eigenvalue (1.284256e-10) is too small

19. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

*Section 18 ( $n + (Cm243\_e10 \rightarrow Cm243 + \text{gamma})$ ): / Form 'eval': (Error # 0): Condition num.*

WARNING: Ratio of smallest/largest eigenvalue (1.436012e-09) is too small

20. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

*Section 19 ( $n + (Cm243\_c \rightarrow Cm243 + \text{gamma})$ ): / Form 'eval': (Error # 0): Condition num.*

WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small

21. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

*Section 20 ( $Cm244 + \text{gamma}$ ): / Form 'eval': / Component 0 (Error # 0): Condition num.*

WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small

22. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

*Section 20 ( $Cm244 + \text{gamma}$ ): / Form 'eval': / Component 1 (Error # 0): Condition num.*

WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small

23. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

*Section 21 ( $n + Cm243$  [angular distribution]): / Form 'eval': (Error # 1): Condition num.*

WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small

24. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

*Section 22 ( $n[\text{multiplicity}:\text{'energyDependent'}, \text{emissionMode}:\text{'prompt'}] + n[\text{emissionMode}:\text{'6 delayed'}] + \text{gamma} [\text{total fission}] [\text{spectrum}]$ ): / Form 'eval': (Error # 0): Condition num.*

WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small

25. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

*Section 23 ( $n[\text{multiplicity}:\text{'energyDependent'}, \text{emissionMode}:\text{'prompt'}] + n[\text{emissionMode}:\text{'6 delayed'}] + \text{gamma} [\text{total fission}] [\text{spectrum}]$ ): / Form 'eval': (Error # 0): Condition num.*

```
WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small
```

26. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.  
*Section 24 (n[multiplicity:'energyDependent', emissionMode:'prompt'] + n[emissionMode:'6 delayed'] + gamma [total fission] [spectrum]): / Form 'eval': (Error # 0): Condition num.*

```
WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small
```

27. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.  
*Section 25 (n[multiplicity:'energyDependent', emissionMode:'prompt'] + n[emissionMode:'6 delayed'] + gamma [total fission] [spectrum]): / Form 'eval': (Error # 0): Condition num.*

```
WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small
```

28. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.  
*Section 26 (n[multiplicity:'energyDependent', emissionMode:'prompt'] + n[emissionMode:'6 delayed'] + gamma [total fission] [spectrum]): / Form 'eval': (Error # 0): Condition num.*

```
WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small
```

29. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.  
*Section 27 (n[multiplicity:'energyDependent', emissionMode:'prompt'] + n[emissionMode:'6 delayed'] + gamma [total fission] [spectrum]): / Form 'eval': (Error # 0): Condition num.*

```
WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small
```

30. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.  
*Section 28 (n[multiplicity:'energyDependent', emissionMode:'prompt'] + n[emissionMode:'6 delayed'] + gamma [total fission] [spectrum]): / Form 'eval': (Error # 0): Condition num.*

```
WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small
```

- fudge-4.0 Errors:

1. ENDF format insists that all outgoing fission neutrons, delayed or otherwise, have spectra. For delayed neutrons this is tough.  
*Reading ENDF file: ../n-096\_Cm\_243.endf (Error # 0): No delayed n dist*

```
WARNING: More than one delayed fission neutron decay time but no MF = 5 data
```

2. Energy range of data set does not match cross section range  
*reaction label 11: n + (Cm243\_c ->Cm243 + gamma) / Product: Cm243\_c / Decay product: gamma\_a / Multiplicity: (Error # 0): Domain mismatch (a)*

```
WARNING: Domain doesn't match the cross section domain: (200000.0 -> 20000000.0) vs (115956.0 -> 20000000.0)
```

3. Energy range of data set does not match cross section range  
*reaction label 11: n + (Cm243\_c -> Cm243 + gamma) / Product: Cm243\_c / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)*

WARNING: Domain doesn't match the cross section domain: (200000.0 -> 20000000.0) vs (115956.0 -> 20000000.0)  
 WARNING: Domain doesn't match the cross section domain: (400000.0 -> 20000000.0) vs (115956.0 -> 20000000.0)  
 WARNING: Domain doesn't match the cross section domain: (153635.0 -> 20000000.0) vs (115956.0 -> 20000000.0)  
 WARNING: Domain doesn't match the cross section domain: (200000.0 -> 20000000.0) vs (115956.0 -> 20000000.0)  
 ... plus 11 more instances of this message
4. Energy range of data set does not match cross section range  
*reaction label 11: n + (Cm243\_c -> Cm243 + gamma) / Product: Cm243\_c / Decay product: gamma\_b / Multiplicity: (Error # 0): Domain mismatch (a)*

WARNING: Domain doesn't match the cross section domain: (400000.0 -> 20000000.0) vs (115956.0 -> 20000000.0)
5. Energy range of data set does not match cross section range  
*reaction label 11: n + (Cm243\_c -> Cm243 + gamma) / Product: Cm243\_c / Decay product: gamma\_c / Multiplicity: (Error # 0): Domain mismatch (a)*

WARNING: Domain doesn't match the cross section domain: (153635.0 -> 20000000.0) vs (115956.0 -> 20000000.0)
6. Energy range of data set does not match cross section range  
*reaction label 11: n + (Cm243\_c -> Cm243 + gamma) / Product: Cm243\_c / Decay product: gamma\_d / Multiplicity: (Error # 0): Domain mismatch (a)*

WARNING: Domain doesn't match the cross section domain: (200000.0 -> 20000000.0) vs (115956.0 -> 20000000.0)
7. Energy range of data set does not match cross section range  
*reaction label 11: n + (Cm243\_c -> Cm243 + gamma) / Product: Cm243\_c / Decay product: gamma\_e / Multiplicity: (Error # 0): Domain mismatch (a)*

WARNING: Domain doesn't match the cross section domain: (300000.0 -> 20000000.0) vs (115956.0 -> 20000000.0)
8. Energy range of data set does not match cross section range  
*reaction label 11: n + (Cm243\_c -> Cm243 + gamma) / Product: Cm243\_c / Decay product: gamma\_f / Multiplicity: (Error # 0): Domain mismatch (a)*

WARNING: Domain doesn't match the cross section domain: (300000.0 -> 20000000.0) vs (115956.0 -> 20000000.0)
9. Energy range of data set does not match cross section range  
*reaction label 11: n + (Cm243\_c -> Cm243 + gamma) / Product: Cm243\_c / Decay product: gamma\_g / Multiplicity: (Error # 0): Domain mismatch (a)*

WARNING: Domain doesn't match the cross section domain: (200000.0 -> 20000000.0) vs (115956.0 -> 20000000.0)
10. Energy range of data set does not match cross section range  
*reaction label 11: n + (Cm243\_c -> Cm243 + gamma) / Product: Cm243\_c / Decay product: gamma\_h / Multiplicity: (Error # 0): Domain mismatch (a)*

WARNING: Domain doesn't match the cross section domain: (300000.0 -> 20000000.0) vs (115956.0 -> 20000000.0)
11. Energy range of data set does not match cross section range  
*reaction label 11: n + (Cm243\_c -> Cm243 + gamma) / Product: Cm243\_c / Decay product: gamma\_i / Multiplicity: (Error # 0): Domain mismatch (a)*

WARNING: Domain doesn't match the cross section domain: (300000.0 -> 20000000.0) vs (115956.0 -> 20000000.0)

- WARNING: Domain doesn't match the cross section domain: (300000.0 -> 20000000.0) vs (115956.0 -> 20000000.0)
12. Energy range of data set does not match cross section range  
*reaction label 11: n + (Cm243\_c ->Cm243 + gamma) / Product: Cm243\_c / Decay product: gamma\_j / Multiplicity: (Error # 0): Domain mismatch (a)*
- WARNING: Domain doesn't match the cross section domain: (300000.0 -> 20000000.0) vs (115956.0 -> 20000000.0)
13. Energy range of data set does not match cross section range  
*reaction label 11: n + (Cm243\_c ->Cm243 + gamma) / Product: Cm243\_c / Decay product: gamma\_k / Multiplicity: (Error # 0): Domain mismatch (a)*
- WARNING: Domain doesn't match the cross section domain: (400000.0 -> 20000000.0) vs (115956.0 -> 20000000.0)
14. Energy range of data set does not match cross section range  
*reaction label 11: n + (Cm243\_c ->Cm243 + gamma) / Product: Cm243\_c / Decay product: gamma\_l / Multiplicity: (Error # 0): Domain mismatch (a)*
- WARNING: Domain doesn't match the cross section domain: (300000.0 -> 20000000.0) vs (115956.0 -> 20000000.0)
15. Energy range of data set does not match cross section range  
*reaction label 11: n + (Cm243\_c ->Cm243 + gamma) / Product: Cm243\_c / Decay product: gamma\_m / Multiplicity: (Error # 0): Domain mismatch (a)*
- WARNING: Domain doesn't match the cross section domain: (300000.0 -> 20000000.0) vs (115956.0 -> 20000000.0)
16. Energy range of data set does not match cross section range  
*reaction label 11: n + (Cm243\_c ->Cm243 + gamma) / Product: Cm243\_c / Decay product: gamma\_n / Multiplicity: (Error # 0): Domain mismatch (a)*
- WARNING: Domain doesn't match the cross section domain: (400000.0 -> 20000000.0) vs (115956.0 -> 20000000.0)
17. Energy range of data set does not match cross section range  
*reaction label 11: n + (Cm243\_c ->Cm243 + gamma) / Product: Cm243\_c / Decay product: gamma\_o / Multiplicity: (Error # 0): Domain mismatch (a)*
- WARNING: Domain doesn't match the cross section domain: (400000.0 -> 20000000.0) vs (115956.0 -> 20000000.0)
18. Calculated and tabulated Q values disagree.  
*reaction label 12: n[multiplicity:'2'] + Cm242 + gamma (Error # 0): Q mismatch*
- WARNING: Calculated and tabulated Q-values disagree: -6045395.549865723 eV vs -5692940. eV!
19. Energy range of data set does not match cross section range  
*reaction label 12: n[multiplicity:'2'] + Cm242 + gamma / Product: gamma\_a / Multiplicity: (Error # 0): Domain mismatch (a)*
- WARNING: Domain doesn't match the cross section domain: (6000000.0 -> 20000000.0) vs (5716570.0 -> 20000000.0)
20. Energy range of data set does not match cross section range  
*reaction label 12: n[multiplicity:'2'] + Cm242 + gamma / Product: gamma\_a / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)*
- WARNING: Domain doesn't match the cross section domain: (6000000.0 -> 20000000.0) vs (5716570.0 -> 20000000.0)

21. Energy range of data set does not match cross section range  
*reaction label 12: n[multiplicity:'2'] + Cm242 + gamma / Product: gamma\_b / Multiplicity: (Error # 0): Domain mismatch (a)*

**WARNING:** Domain doesn't match the cross section domain: (6000000.0 -> 20000000.0) vs (5716570.0 -> 20000000.0)

22. Energy range of data set does not match cross section range  
*reaction label 12: n[multiplicity:'2'] + Cm242 + gamma / Product: gamma\_b / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)*

**WARNING:** Domain doesn't match the cross section domain: (6000000.0 -> 20000000.0) vs (5716570.0 -> 20000000.0)

23. Energy range of data set does not match cross section range  
*reaction label 12: n[multiplicity:'2'] + Cm242 + gamma / Product: gamma\_c / Multiplicity: (Error # 0): Domain mismatch (a)*

**WARNING:** Domain doesn't match the cross section domain: (6500000.0 -> 20000000.0) vs (5716570.0 -> 20000000.0)

24. Energy range of data set does not match cross section range  
*reaction label 12: n[multiplicity:'2'] + Cm242 + gamma / Product: gamma\_c / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)*

**WARNING:** Domain doesn't match the cross section domain: (6500000.0 -> 20000000.0) vs (5716570.0 -> 20000000.0)

25. Calculated and tabulated Q values disagree.  
*reaction label 13: n[multiplicity:'3'] + Cm241 + gamma (Error # 0): Q mismatch*

**WARNING:** Calculated and tabulated Q-values disagree: -13014920.3961792 eV vs -1.26625e7 eV!

26. Energy range of data set does not match cross section range  
*reaction label 13: n[multiplicity:'3'] + Cm241 + gamma / Product: gamma\_a / Multiplicity: (Error # 0): Domain mismatch (a)*

**WARNING:** Domain doesn't match the cross section domain: (13500000.0 -> 20000000.0) vs (12715000.0 -> 20000000.0)

27. Energy range of data set does not match cross section range  
*reaction label 13: n[multiplicity:'3'] + Cm241 + gamma / Product: gamma\_a / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)*

**WARNING:** Domain doesn't match the cross section domain: (13500000.0 -> 20000000.0) vs (12715000.0 -> 20000000.0)

28. Energy range of data set does not match cross section range  
*reaction label 13: n[multiplicity:'3'] + Cm241 + gamma / Product: gamma\_b / Multiplicity: (Error # 0): Domain mismatch (a)*

**WARNING:** Domain doesn't match the cross section domain: (13500000.0 -> 20000000.0) vs (12715000.0 -> 20000000.0)

29. Energy range of data set does not match cross section range  
*reaction label 13: n[multiplicity:'3'] + Cm241 + gamma / Product: gamma\_b / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)*

**WARNING:** Domain doesn't match the cross section domain: (13500000.0 -> 20000000.0) vs (12715000.0 -> 20000000.0)

30. Energy range of data set does not match cross section range  
*reaction label 13: n[multiplicity:'3'] + Cm241 + gamma / Product: gamma\_c / Multiplicity: (Error # 0): Domain mismatch (a)*

**WARNING:** Domain doesn't match the cross section domain: (13500000.0 -> 20000000.0) vs (12715000.0 -> 20000000.0)

31. Energy range of data set does not match cross section range  
*reaction label 13: n[multiplicity:'3'] + Cm241 + gamma / Product: gamma\_c / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)*

**WARNING:** Domain doesn't match the cross section domain: (13500000.0 -> 20000000.0) vs (12715000.0 -> 20000000.0)

32. Energy range of data set does not match cross section range  
*reaction label 13: n[multiplicity:'3'] + Cm241 + gamma / Product: gamma\_d / Multiplicity: (Error # 0): Domain mismatch (a)*

**WARNING:** Domain doesn't match the cross section domain: (13500000.0 -> 20000000.0) vs (12715000.0 -> 20000000.0)

33. Energy range of data set does not match cross section range  
*reaction label 13: n[multiplicity:'3'] + Cm241 + gamma / Product: gamma\_d / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)*

**WARNING:** Domain doesn't match the cross section domain: (13500000.0 -> 20000000.0) vs (12715000.0 -> 20000000.0)

34. Energy range of data set does not match cross section range  
*reaction label 13: n[multiplicity:'3'] + Cm241 + gamma / Product: gamma\_e / Multiplicity: (Error # 0): Domain mismatch (a)*

**WARNING:** Domain doesn't match the cross section domain: (13500000.0 -> 20000000.0) vs (12715000.0 -> 20000000.0)

35. Energy range of data set does not match cross section range  
*reaction label 13: n[multiplicity:'3'] + Cm241 + gamma / Product: gamma\_e / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)*

**WARNING:** Domain doesn't match the cross section domain: (13500000.0 -> 20000000.0) vs (12715000.0 -> 20000000.0)

36. Energy range of data set does not match cross section range  
*reaction label 13: n[multiplicity:'3'] + Cm241 + gamma / Product: gamma\_f / Multiplicity: (Error # 0): Domain mismatch (a)*

**WARNING:** Domain doesn't match the cross section domain: (13500000.0 -> 20000000.0) vs (12715000.0 -> 20000000.0)

37. Energy range of data set does not match cross section range  
*reaction label 13: n[multiplicity:'3'] + Cm241 + gamma / Product: gamma\_f / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)*

**WARNING:** Domain doesn't match the cross section domain: (13500000.0 -> 20000000.0) vs (12715000.0 -> 20000000.0)

38. Energy range of data set does not match cross section range  
*reaction label 13: n[multiplicity:'3'] + Cm241 + gamma / Product: gamma\_g / Multiplicity: (Error # 0): Domain mismatch (a)*

**WARNING:** Domain doesn't match the cross section domain: (13500000.0 -> 20000000.0) vs (12715000.0 -> 20000000.0)

39. Energy range of data set does not match cross section range  
*reaction label 13: n[multiplicity:'3'] + Cm241 + gamma / Product: gamma\_g / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)*

WARNING: Domain doesn't match the cross section domain: (13500000.0 -> 20000000.0) vs (12715000.0 -> 20000000.0)

40. Calculated and tabulated Q values disagree.  
*reaction label 15: Cm244 + gamma (Error # 0): Q mismatch*

WARNING: Calculated and tabulated Q-values disagree: 6448806.27456665 eV vs 6801260. eV!

41. Multiplicity does not match sum of linked product multiplicities!  
*multiplicitySum label 13: n + (Cm243\_c -> Cm243 + gamma) total gamma multiplicity (Error # 0): summedMultiplicityMismatch*

WARNING: Multiplicity does not match sum of linked product multiplicities! Max diff: 24.34%

42. Multiplicity does not match sum of linked product multiplicities!  
*multiplicitySum label 14: n[multiplicity:'2'] + Cm242 + gamma total gamma multiplicity (Error # 0): summedMultiplicityMismatch*

WARNING: Multiplicity does not match sum of linked product multiplicities! Max diff: 100.00%

43. Multiplicity does not match sum of linked product multiplicities!  
*multiplicitySum label 15: n[multiplicity:'3'] + Cm241 + gamma total gamma multiplicity (Error # 0): summedMultiplicityMismatch*

WARNING: Multiplicity does not match sum of linked product multiplicities! Max diff: 56.55%

44. Calculated and tabulated Q values disagree.  
*fissionComponent label 0: /reactionSuite/fissionComponents/fissionComponent[@label='0'] (Error # 0): Q mismatch*

WARNING: Calculated and tabulated Q-values disagree: 227349449924.1624 eV vs 2.04024e8 eV!

45. Calculated and tabulated Q values disagree.  
*fissionComponent label 1: /reactionSuite/fissionComponents/fissionComponent[@label='1'] (Error # 0): Q mismatch*

WARNING: Calculated and tabulated Q-values disagree: 227349449924.1624 eV vs 2.04024e8 eV!

46. Calculated and tabulated Q values disagree.  
*fissionComponent label 2: /reactionSuite/fissionComponents/fissionComponent[@label='2'] (Error # 0): Q mismatch*

WARNING: Calculated and tabulated Q-values disagree: 227349449924.1624 eV vs 2.04024e8 eV!

47. Calculated and tabulated Q values disagree.  
*fissionComponent label 3: /reactionSuite/fissionComponents/fissionComponent[@label='3'] (Error # 0): Q mismatch*

WARNING: Calculated and tabulated Q-values disagree: 227349449924.1624 eV vs 2.04024e8 eV!

48. A covariance matrix was not positive semi-definite, so it has negative eigenvalues.  
*Section 21 (n + Cm243 [angular distribution]): / Form 'eval': / LegendreLValue L=1 vs 1 (Error # 0): Bad evs*

```
WARNING: 11 negative eigenvalues! Worst case = -9.167811e-06
```

- njoy2012 Warnings:

1. In some evaluations, the partial fission reactions MT=19, 20, 21, and 38 are given in File 3, but no corresponding distributions are given. In these cases, it is assumed that MT=18 should be used for the fission neutron distributions.  
*heatr...prompt kerma (0): HEATR/hinit (3)*

```
---message from hinit---mt19 has no spectrum
mt18 spectrum will be used.
```

2. Recoil is not given, so one-particle recoil approximation used.  
*heatr...prompt kerma (1): HEATR/hinit (4)*

```
---message from hinit---mf6, mt 16 does not give recoil za= 96242
one-particle recoil approx. used.
```

3. Recoil is not given, so one-particle recoil approximation used.  
*heatr...prompt kerma (2): HEATR/hinit (4)*

```
---message from hinit---mf6, mt 17 does not give recoil za= 96241
one-particle recoil approx. used.
```

4. Recoil is not given, so one-particle recoil approximation used.  
*heatr...prompt kerma (3): HEATR/hinit (4)*

```
---message from hinit---mf6, mt 51 does not give recoil za= 96243
one-particle recoil approx. used.
```

5. Recoil is not given, so one-particle recoil approximation used.  
*heatr...prompt kerma (4): HEATR/hinit (4)*

```
---message from hinit---mf6, mt 52 does not give recoil za= 96243
one-particle recoil approx. used.
```

6. Recoil is not given, so one-particle recoil approximation used.  
*heatr...prompt kerma (5): HEATR/hinit (4)*

```
---message from hinit---mf6, mt 53 does not give recoil za= 96243
one-particle recoil approx. used.
```

7. Recoil is not given, so one-particle recoil approximation used.  
*heatr...prompt kerma (6): HEATR/hinit (4)*

```
---message from hinit---mf6, mt 54 does not give recoil za= 96243
one-particle recoil approx. used.
```

8. Recoil is not given, so one-particle recoil approximation used.  
*heatr...prompt kerma (7): HEATR/hinit (4)*

```
---message from hinit---mf6, mt 55 does not give recoil za= 96243
one-particle recoil approx. used.
```

9. Recoil is not given, so one-particle recoil approximation used.  
*heatr...prompt kerma (8): HEATR/hinit (4)*

```
---message from hinit---mf6, mt 56 does not give recoil za= 96243
one-particle recoil approx. used.
```

10. Recoil is not given, so one-particle recoil approximation used.  
*heatr...prompt kerma (9): HEATR/hinit (4)*

```
---message from hinit---mf6, mt 57 does not give recoil za= 96243
one-particle recoil approx. used.
```

11. Recoil is not given, so one-particle recoil approximation used.  
*heatr...prompt kerma (10): HEATR/hinit (4)*

```
---message from hinit---mf6, mt 58 does not give recoil za= 96243
one-particle recoil approx. used.
```

12. Recoil is not given, so one-particle recoil approximation used.  
*heatr...prompt kerma (11): HEATR/hinit (4)*

```
---message from hinit---mf6, mt 59 does not give recoil za= 96243
one-particle recoil approx. used.
```

13. Recoil is not given, so one-particle recoil approximation used.  
*heatr...prompt kerma (12): HEATR/hinit (4)*

```
---message from hinit---mf6, mt 60 does not give recoil za= 96243
one-particle recoil approx. used.
```

14. Recoil is not given, so one-particle recoil approximation used.  
*heatr...prompt kerma (13): HEATR/hinit (4)*

```
---message from hinit---mf6, mt 91 does not give recoil za= 96243
one-particle recoil approx. used.
```

15. Recoil is not given, so one-particle recoil approximation used.  
*heatr...prompt kerma (14): HEATR/hinit (4)*

```
---message from hinit---mf6, mt102 does not give recoil za= 96244
photon momentum recoil used.
```

16. There is a problem with the fission energy release.  
*heatr...prompt kerma (15): HEATR/nheat (3)*

```
---message from nheat---changed q from 2.040240E+08 to 1.946950E+08
for mt 18
```

- **acelst** Warnings:

1. The incident energy grid is not monotonic for this angular distribution  
*0: Bad Ang. Dist.*

```
ACELST WARNING - Processing Ang.Dist.MT      2
E-grid non-monotonic 9.439010000E-02 9.439010000E-02
```

2. The incident energy grid is not monotonic for this angular distribution  
*1: Bad Ang. Dist.*

```
ACELST WARNING - Processing Ang.Dist.MT      51
E-grid non-monotonic 9.439010000E-02 9.439010000E-02
```

3. The incident energy grid is not monotonic for this angular distribution  
*2: Bad Ang. Dist.*

```
ACELST WARNING - Processing Ang.Dist.MT      52
E-grid non-monotonic 9.439010000E-02 9.439010000E-02
```

- **xsectplotter** Errors:

1. ENDF format insists that all outgoing fission neutrons, delayed or otherwise, have spectra. For delayed neutrons this is tough.  
*(Error # 2): No delayed n dist*

```
WARNING: More than one delayed fission neutron decay time but no MF = 5 data
```